

~~Box II, 97.E~~~~Box 7b~~~~Box 5: 186. a~~

## 97. E Box. 0028 CATALOGUE

OF

## APPARATUS AND MINERALS

SUITABLE FOR

## LECTURES AND CLASS INSTRUCTION

IN

SUBJECT 13.—Mineralogy,

AND

SUBJECT 18.—Mining.



LONDON :

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## INSTRUCTIONS.

All applications for apparatus are to be made on Science Form, No. 49, which will be supplied on application to the Secretary, Science and Art Department, South Kensington.

The prices given in the right-hand column are the highest on which the aid of 50 per cent. is given. The applicant is at liberty to select a higher-priced article, but the aid towards the purchase of it will be only 50 per cent. of the price in the right-hand column. Should a lower-priced article be selected the aid will be only to the extent of 50 per cent. of its price. No aid is given on those articles to which no such price is attached.

Apparatus grants are rigorously confined to articles of a permanent and non-destructible nature ; hence no aid is afforded in the purchase of breakable articles, such as glass retorts, test tubes, &c., or indeed generally in the purchase of articles to be used by the student as distinguished from those of a permanent and illustrative character which are required by the teacher in giving instruction in science. To such articles no prices are affixed in the right-hand column ; the articles are mentioned simply to assist teachers in their selection.



## PREFACE.

MINING is but the practical application of several sciences ; and some of the Apparatus used for teaching Applied Mechanics, Experimental Physics, and Geology will occasionally be found necessary. Beyond this a difficulty arises in dealing with the practice of the art, which must vary with different localities. Mining Diagrams could generally be prepared from the reports of H.M. Inspector of Mines for the district in which the school or class is situated. The teacher should make a collection of minerals from his own district ; these will often be found more useful than purchased collections.

# SUBJECTS :—MINERALOGY AND MINING.

<b>1.—Blowpipe apparatus.</b>		£ s. d.
Horne and Thornthwaite, 18s.		0 18 0
Newton & Co., 1l. 1s. to 3l. 3s.		
Griffin, 12s., 21s., 3l. 13s. 6d., and 8l. 8s.		
<b>2.—Blowpipes.</b>		
Elliott, Brothers, 6d., 1s., 2s. 6d., 5s., 8s.		0 5 0
Griffin, 8d.		
<b>3.—Clinometers for taking angle of strata.</b>		
Elliott, Brothers, 15s. to 2l. 5s.		0 15 0
Newton & Co., 15s.		
<b>4.—Electrometers and Gold Leaf.</b>		
Elliott, Brothers, 3s. 6d., 10s., and 1l. 5s.		0 10 0
Griffin, 3s. 6d.		
Ladd, 10s.		
Newton & Co., 10s. 6d.		
<b>5.—Goniometers.</b>		
Newton & Co., 1l.		1 4 0
Elliott, Brothers, 1l. 4s., 3l. 3s., to 5l. 5s.		
Horne and Thornthwaite, 1l. 1s. to 5l.		
<b>6.—Geological models.</b>		
Sopwith, 5l.		
<b>7.—Hydrometers.</b>		
Elliott, Brothers, 12s. 6d.		0 12 6
Horne and Thornthwaite, 5s.		
Newton & Co., 5s.		
Ladd, 12s. 6d.		
Griffin, from 1s. 6d. each.		
<b>8.—Magnetic needles.</b>		
Horne and Thornthwaite, 3s.		0 7 6
Elliott, Brothers, 7s. 6d.		
Griffin, 4s.		
Ladd, 7s. 6d.		
<b>9.—Models in wood to illustrate crystalline forms.</b>		
Larkin, 6s., 10s. 6d. to 15s.		0 15 0
Tennant, 3l. 3s.		
Ladd, 10s. 6d.		
Griffin, 114, Wood, 3l. 10s.; 120, Stoneware, 2l.		



10.—Mohs's degrees of hardness, and Von Kobell's degrees of fusibility.

Horne and Thornthwaite, 12s. 6d.  
Griffin, Mohs, 6s.; Von Kobell's, 4s.

£ s. d.

0 12 6

11.—Polarizing apparatus.

Newton & Co., 15s.  
Elliott, Brothers, 10s.  
Horne and Thornthwaite, 16s.  
Griffins, Norremberg's with Nicoll's prism, 30s.  
Ladd, 15s.

0 15 0

12.—Safety Lamps,—Davy, Stephenson, &c.

13.—A collection of 75 rocks and minerals adapted for science schools, and classes, by Bryce M. Wright, 36, Great Russell Street, W.C.

Price numbered and catalogued, with case - - -  
Without case - - -

£ s. d.  
1 15 0  
1 5 0

Crystallized quartz.  
Smoked do.  
Rose do.  
Black do.  
Cairngorum.  
Chalcedony.  
Semi-opal.  
Wood do.  
Agate.  
Do.  
Jasper.  
Do.  
Garnet.  
Black do.  
Pseudomorphous do.  
Prehnite.  
Stilbite.  
Beryl.  
Lapis-lazuli.  
Actinolite.  
Mountain cork.  
Kyanite.  
Topaz.  
Serpentine.  
Zircon.  
Scaly talc.  
Emeraldite.  
Mica.  
Brown-mica.  
Websterite.  
Steatite.

Felspar.  
Brucite.  
Natrolite.  
Arragonite.  
Do.  
Calcareous-spar.  
Iceland do.  
Green fluor-spar.  
Purple do.  
Gypsum.  
Sulphate of strontian.  
Sulphate of barytes.  
Selenite.  
Markasite.  
Cubic iron-pyrites.  
Hematite.  
Specular-iron.  
Magnetic-iron.  
Phosphate of iron.  
Sulphide of antimony.  
Copper nickel.  
Bournonite.  
Cobalt-bloom.  
Cinnabar.  
Red oxide of zinc.  
Native bismuth.  
Sulphide of copper.  
Blue carbonate of copper.  
Red oxide of copper.  
Phosphate of lead.  
Arsenic phosphate of lead.

Blende.  
 Red oxide of zinc.  
 Plumbago.  
 Bitumen.  
 Oxide of tin.  
 Sulphide of tin.  
 Vitreous copper.

Galena.  
 Do.  
 White carbonate of lead.  
 Carbonate of zinc.  
 Native sulphur.  
 Jet.

#### 14.—A collection of 125 rocks and minerals.

Price numbered and catalogued, with mahogany case	£ s. d.		
	3	15	0
" " " without case	3	0	0
Striated quartz.			
Crystallized do.			
Smoked do.			
Black do.			
Cairngorum.			
Rock-crystal.			
Massive quartz.			
Hornstone.			
Chalcedony.			
Crystallized do.			
Madrepore.			
Semi-opal.			
Agate.			
Do.			
Moss-agate.			
Ribbon-agate.			
Jasper.			
Conglomerate.			
Ribbon-jasper.			
Heliotrope.			
Pseudomorphous garnet.			
Idocrase.			
Heulandite.			
Prehnite.			
Mesotype.			
Do.			
Hydrolite.			
Chalilite.			
Kilinite.			
Spodumene.			
Harmotome.			
Felspar.			
Crystallized granite.			
Hornblende.			
Corundum.			
Picrolite.			
Wavellite.			
Websterite.			
Red jasper.			
Axinite.			
Beryl.			
Gypsum.			
Arragonite.			
Selenite.			
Fluor-spar.			
Fluor spar.			
Do. massive.			
Yellow fluor-spar.			
Baryto-calcite.			
Analcime.			
Mica.			
Calc-spar.			
Do.			
Do. crystallized.			
Satin-spar.			
Sulphate of barytes.			
Massive barytes.			
Sulphate of strontian.			
Carbonate of barytes.			
Iron pyrites.			
Sulphide of iron.			
Hematite.			
Specular iron.			
Wood do.			
Hydrous oxide of iron.			
Carbonate of iron.			
Tungstate of iron.			
Arsenate of iron.			
Markasite (white iron).			
Chromate of iron.			
Bourmonite.			
Rutile (ore of titanium).			
Ore of uranium.			
Oxide of tin.			
Sulphide of tin.			
Stream tin.			
Nickel.			
Silicate of zinc.			
Sulphide of zinc.			
Tungstate of lime.			
Massive do.			
Manganese.			
Pink do.			
Copper nickel.			
Antimony sulphide.			
Vitreous copper.			
Native antimony.			
Jamesonite.			
Copper.			
Variegated copper.			



Native Copper.

Do.

Red oxide of copper.

Copper ore.

Massive copper.

Carbonate of copper.

Arseniate of copper.

Smithsonite.

Carbonate of zinc.

Octahedral blende.

Galena.

Do.

Carbonate of lead.

Do.

Sulphate of lead.

Cupreous sulphate of lead.

Arsenic phosphate of lead.

Chromate of lead.

Arseniate of lead.

Phosphate of lead.

Wood arseniate of copper.

Fahlertz (grey copper).

Malachite.

Copper-pyrites.

Jet.

Anthracite.

Bitumen.

Native sulphur.

15.—A collection of 75 rocks and minerals adapted for teaching,  
by Mr. James R. Gregory, 25, Golden Square, W.

Packed in box and catalogued

£	s.	d.
1	15	0

Native copper.

„ sulphur.

Anthracite.

Cannel coal.

Lignite.

Graphite.

Stibnite.

Galena.

Blende.

Cinnabar.

Iron-pyrites.

Radiated pyrites.

Mispickel.

Copper-pyrites.

Rock-salt.

Fluor.

Magnetite.

Chromic iron.

Red oxide of zinc.

Corundum.

Red hematite.

Oxide of tin.

Stream tin.

Rutile.

Limonite.

Psilomelane.

Quartz.

Rock-crystal.

Chalcedony.

Agate.

Jasper.

Flint.

Augite.

Hornblende.

Tremolite.

Actinolite.

Asbestos.

Beryl.

Olivine.

Garnet.

Mica.

Chlorite.

Calamine.

Prehnite.

Analcime.

Wolfram.

Heavy spar.

Celestine.

Chalybite.

Arrgonite.

Websterite.

Malachite.

Azurite.

Lepidolite.

Lapis-lazuli.

Orthoclase (felspar).

Granite.

Mica slate.

Syenite.

Porphyry.

Trachyte.

Pumice.

Obsidian.

Kaolin.

Topaz.

Talc.

Serpentine.

Gypsum.

Selenite.

Pyromorphite.

Calcite.

Iceland spar.

Stalactite.

Magnesite.



## 16.—A collection of 125 rocks and minerals.

Price packed in box and catalogued - -		£	s.	d.
		4	0	0
Native gold.	Heavy spar.			
„ silver.	Do.			
„ copper.	Celestine.			
„ sulphur.	Anhydrite.			
Anthracite.	Gypsum.			
Cannel coal.	Selenite.			
Lignite.	Alabaster.			
Graphite.	Aluminite.			
Realgar.	Dolomite.			
Stibnite.	Pearlspar.			
Galena.	Chalybite.			
Do.	Arragonite.			
Blende.	Witherite.			
Cinnabar.	Strontianite.			
Pyrrhotine.	Cerussite.			
Iron-pyrites.	Malachite.			
Flint.	Amber.			
Common opal.	Cobaltine.			
Coccolite.	Radiated pyrites.			
Augite.	Mispickel.			
Diallage.	Molybdenite.			
Hornblende.	Copper-pyrites.			
Tremolite.	Grey copper.			
Actinolite.	Rock-salt.			
Asbestos.	Fluor-spar			
Beryl.	Do.			
Olivine.	Cryolite.			
Garnet.	Red oxide of copper.			
Colophonite.	Magnetite.			
Scapolite.	Magnetic iron sand.			
Mica.	Chromic iron.			
Lepidolite.	Spartalite.			
Lapis-lazuli.	Corundum.			
Leucite.	Iron-glance.			
Oligoclase.	Red hematite.			
Orthoclase (felspar).	Oxide of tin.			
Granite.	Stream tin.			
Do.	Rutile.			
Mica slate.	Magnanite.			
Syenite.	Limonite.			
Porphyry.	Clay ironstone.			
Trachyte.	Psilomelane.			
Pumice.	Quartz.			
Obsidian.	Rose quartz.			
Kaolin.	Rock-crystal.			
Topaz.	Amethyst.			
Kyanite.	Calcedony.			
Schorl.	Agate.			
Talc.	Jasper.			
Mesotype.	Bloodstone.			
Stilbite.	Indurated talc.			
Datholite.	Serpentine.			
Wolfram.	Precious serpentine.			



Chlorite.  
Chrysocolla.  
Calamine.  
Prehnite.  
Analcime.  
Apatite.  
Pyromorphite.  
Turquoise.  
Wavellite.

Calcite.  
Do.  
Iceland spar.  
White marble.  
Chalk.  
Stalactite.  
Calcareous tufa.  
Magnesite.  
Azurite.

**17.—A collection of 50 minerals and 25 rock specimens, by  
J. Tennant, 149, Strand, W.C.**

Price catalogued in plain deal box with trays - £ s. d.  
1 10 0

Graphite.  
Coal.  
Bituminous coal.  
Non-bituminous coal.  
Brown coal.  
Bitumen.  
Torbanite.  
Fluor-spar.  
Rock salt  
Calcite.  
Witherite.  
Strontianite.  
Barytocalcite.  
Barytes.  
Celestine.  
Gypsum.  
Websterite.  
Quartz.  
Muscovite.  
Mica.  
Felspar.  
Bronzite.  
Hypersthene.  
Hornblende.  
Stilbite.  
Prehnite.  
Allophane.  
Chlorite.  
Analcime.  
Allophane.  
Hematite (specular iron).  
Magnetite.  
Siderite (carbonate of iron).  
Pyrites.  
Pyrolusite (varvicite).  
Cassiterite (oxide of tin).  
Rutile.  
Arsenic.  
Antimonite (sulphide of anti-  
mony).  
Manganite.

Psilomelane.  
Rhodonite.  
Copper.  
Cuprite.  
Chalcopyrite (copper pyrites).  
Wolfram.  
Galena.  
Jamesonite.  
Calamine.  
Blende.  
Fullers earth.  
Pipe clay.

**Rocks.**

Granite (in small grains).  
Granite (in large grains).  
Gneiss.  
Mica slate.  
Mica slate with garnets.  
Clay slate.  
Clay slate (with crystals of iron  
pyrites).  
Hornblende slate.  
Porphyry.  
Syenite.  
Serpentine.  
Hornblende rock.  
Old red sandstone.  
Millstone grit.  
Micaceous sandstone.  
New red sandstone.  
Compact limestone.  
Crystalline limestone.  
Magnesian limestone.  
Oolite limestone.  
Clay.  
Obsidian.  
Pumice.  
Trachyte.  
Basalt.



18.—A collection of 95 minerals and 30 rock specimens, by  
J. Tennant, 149, Strand, W.C.

Price catalogued in plain deal box with trays

£	s.	d.
3	10	0

Graphite.	Tourmaline.
Coal.	Corundum.
Bituminous coal.	Spinel.
Non-bituminous coal.	Fullers earth.
Brown coal.	Pipe clay.
Bitumen.	Gold.
Torbanite.	Silver.
Sulphur.	Platinum.
Fluor-spar.	Hematite (specular iron).
Rock salt.	Siderite.
Arragonite.	Ilmenite (carbonate of iron).
Calcite.	Pyrites.
Witherite.	Mispickel.
Strontianite.	Pyrolusite (vavicite).
Barytocalcite	Rhodonite.
Barytes.	Psilomelane.
Celestine.	Copper.
Gypsum.	Cuprite.
Websterite.	Malachite.
Wavellite.	Tetrahedrite.
Quartz.	Chalcopyrite (copper pyrites).
Rock crystal.	Embesite.
Amethyst.	Bournonite.
Cairngorum.	Wolfram.
Agate.	Oxide of tin.
Chalcedony.	Cassiterite.
Carnelian.	Rutile.
Jasper.	Antimonite (sulphide of anti-
Hornstone.	mony).
Opal.	Arsenic.
Garnet.	Bismuth.
Do.	Cerussite.
Do.	Galena.
Do.	Jamesonite.
Felspar.	Calamine.
Labradorite.	Blende.
Mica.	
Beryl.	
Olivine.	
Augite.	
Bronzite.	
Hypersthene.	
Brewsterite.	
Chabasite.	
Hornblende.	
Analcime.	
Harmotome.	
Stilbite.	
Prehnite.	
Allophane.	
Chlorite.	
Topaz.	

Rocks.

Granite (in small grains).  
Granite (in large grains).  
Felspar (decomposed).  
Gneiss.  
Mica slate.  
Mica slate with quartz.  
Clay slate.  
Clay slate (with crystals of iron  
pyrites).  
Chlorite slate.  
Hornblende slate.  
Porphyry.  
Syenite.  
Serpentine.



Hornblende rock.  
 Hypersthene rock.  
 Old red sandstone.  
 Millstone grit.  
 Micaceous sandstone.  
 New red sandstone.  
 Compact limestone.  
 Crystalline limestone.  
 Magnesian limestone.

Oolitic limestone.  
 Clay.  
 Obsidian.  
 Pumice.  
 Trachyte.  
 Basalt.  
 Amygdaloid.  
 Sand.

19.—Collection of 100 specimens of sample Minerals, 2 square inches, by Griffin.

£	s.	d.
1	1	0

20.—Collection of 100 specimens of metallic ores, 4 square inches, by Griffin.

2	12	6
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21.—Collection of 100 specimens of rocks, minerals, and ores, illustrative of physical geography, about 4 square inches, by Griffin.

1	11	6
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Old red sandstone.  
 Clay.  
 Old red sandstone.  
 Limestone.  
 Limestone.  
 Basalt.  
 Amygdaloid.  
 Sand.

Old red sandstone.  
 Clay.  
 Old red sandstone.  
 Limestone.  
 Limestone.  
 Basalt.  
 Amygdaloid.  
 Sand.

27.—Collection of 100 specimens of sample minerals, 2 copies.  
 Index, by G. E. Eyre.

1763.  
 250.  
 3/65.]

28.—Collection of 100 specimens of metallic ores, 1 copy.  
 Index, by G. E. Eyre.

1763.  
 250.  
 3/65.]

29.—Collection of 100 specimens of rocks, minerals, and ores.  
 Index, by G. E. Eyre.

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